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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,544	01/16/2001	Gerald B. Eaton		3838

7590

04/25/2003

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EXAMINER

CHOI, LING SIU

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

#2

Call to cancel
the non selected claim

Office Action Summary

Application No.
09/760,544

Applicant(s)
Eaton et al.

Examiner
Ling-Siu Choi

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1713



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 6, 2001
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-51 is/are pending in the application.
- 4a) Of the above, claim(s) 49-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 10 & 1 6) ☐ Other:

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DETAILED ACTION

1. This Office Action is a Continuation of US Application Serial No. 09/081,964, filed May 20, 1998, now US Patent No. 6,015,779, which is a **Continuation-in-Part** of US Application Serial No. 08/619,840, filed March 19, 1996, now US Patent No. 5,869,570.

2. This Office Action is in response to the Preliminary Amendment filed March 6, 2001. Claims 1-22 were canceled and claims 23-51 have been added. Claims 23-51 are now pending wherein claims **23, 36, and 49** are independent ones.

3. This Office Action is also in response to the Response to the Restriction/Election requirement. Claims 23-48 of Group I have been elected with traverse. It is noted that claims 23-48 are drawn to a process to form a substantial non-crystalline, ultra-high molecular weight polyolefin and claims 49-51 are drawn to a drag reducing agent. Since claims 49-51 can be made by another and materially different process disclosed in US 4,493,904 to Mack, the Restriction/Election is made as final.

Claim Objections

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4. Claims 32, 33, 45, and 46 objected to because of the following informalities: (a) claims 32 and 45, "the catalyst system" is suggested to be changed to --the catalyst system further-- and (b) claims 33 and 46, line 1, "the reactant mixture" is suggested to be changed to --the reactant mixture further--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 27-28 and 40-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 27 and 40, lines 1-2, the recitation "the alpha olefin monomers comprise homopolymers, terpolymers or copolymers" causes indefiniteness because a monomer can not comprise a polymer - the polymer being made of monomers.

Claims 28 and 41, lines 1-2, the recitation "the alpha olefin monomerd comprise copolymers of 1-hexene and 1-dodecene alpha olefins or co-polymers of 1-octene and

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1-tetradodecene alpha olefins" causes indefiniteness because alpha olefin monomer can not comprise a copolymer.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 36, 42, and 44-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 4, 6, and 9-11 of US Patent No. 6,242,395. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference between claims 36, 42, and 44-48 of the present invention and claims 1-2, 4, 6, and 9-11 of US Patent No. 6,242,395, respectively, is as follows,

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present invention	US 6,242,395
a process for forming a substantially non-crystalline, ultra-high molecular weight polyolefin	a process for forming <i>a drag reducing agent</i> comprising a non-crystalline, ultra-high molecular weight polyalphaolefin having an <i>inherent viscosity of at least about 10 deciliters per gram</i>

This table clearly demonstrates that scopes of 1-2, 4, 6, and 9-11 of US Patent No. 6,242,395 fall into the corresponding scopes of the claims 36, 42, and 44-48 of the present invention.

Claim Rejections - 35 USC § 112

9. **The following is a quotation of the first paragraph of 35 U.S.C. 112:**

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 23 and 36 are rejected under 35 USC 112, first paragraph, as containing subject matter which was not describes in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

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possession of the claimed invention. Support for "a **substantially** non-crystalline, ultra-high molecular weight polyolefin" is not found. Furthermore, if the original executed oath or declaration filed on the filing date of the application fails to refer to the preliminary amendment which was included with the application papers on filing, the preliminary amendment will not be considered part of the original disclosure." See MPEP 608.04 (b).

Claim Rejections - 35 USC § 102/103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 23-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Vandenberg (US 3,354,139).

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*The present invention relates to a process to prepare a substantially non-crystalline, ultra-high molecular weight polyolefin, the process comprising (a) contacting olefin monomers with a catalyst system in a reactant mixture and (b) polymerizing the olefin monomers at a temperature at about or less than 25°C to a stage that at least a portion of the olefin monomers polymerize in the reactant mixture to provide a non-crystalline, ultra-high molecular weight polyolefin, wherein the catalyst system includes a **transition metal catalyst** and a **halohydrocarbon co-catalyst** (summary of claim 23).*

Vandenberg discloses a process to prepare a polyethylene, the process comprising the contact of ethylene with a catalyst which is formed by mixing a compound of titanium with an organoaluminum compound in the presence of a polyhaloalkane in the general formula of $R_1R_2CX_1X_2$ (claims 1-2). Vandenberg further disclose that the polymerization is carried out at a temperature range from about -50°C to about 150°C (col. 4, lines 43-46) and anhydrous ethanol is introduced to stop the polymerization (col. 5, lines 22-23). Vandenberg furthermore discloses that "...ethylene is rapidly polymerized to a polymer of very high molecular weight frequently within the range of 300,000 to 3,000,000 or high" (col. 1, lines 31-37) and "this invention relates to.....a method of controlling the molecular weight of the polyethylene produced so that the polymer may be produced in any desired range of molecular weight" (col. 1, lines 9-14) by using

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polyhaloalkane. However, Vandenberg is silent on the resulting polyethylene to be non-crystalline. In view of the substantially identical processes of the present invention and the disclosure of vendenberg, the Examiner has a reasonable base to believe the resulting polyethylene would possess the claimed scope of the present claims. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. **In re Best**, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); **In re Fitzgerald**, 205 USPQ 594 (CCPA 1980).

14. Claims 36-48 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Takahashi (US 5,122,584).

The present invention also relates to a process to prepare a substantially non-crystalline, ultra-high molecular weight polyolefin, the process comprising (a) contacting olefin monomers with a catalyst system in a reactant mixture and (b) polymerizing the olefin monomers at a temperature at about or less than 25°C to a stage that at least a portion of the olefin monomers polymerize in the reactant mixture to provide a non-crystalline, ultra-high molecular weight polyolefin, wherein the catalyst system includes a non-metallocene transition metal catalyst and an alkylaluminum co-catalyst (summary of claim 36).

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Takahashi discloses a process to prepare a polyolefin, the process comprising the contact of ethylene and an α -olefin having 3-20 carbons with a catalyst at a temperature of 20-95°C, wherein the catalyst comprises (a) a solid catalyst component for a Ziegler type catalyst which is obtained by contacting a magnesium halide, a titanium halide, and tetrahydrofuran and (b) an aluminoxane (claim 1). It is noted that Takahashi is silent on the resulting polyolefin to be non-crystalline and have an ultra-high molecular weight. However, Takahashi further disclose that "the present invention is to provide a process for preparing an ethylene copolymer which....is excellent in transparency, strength,at a low polymerization temperature..." (col. 2, lines 61-68). Since such properties are characterized of non-crystalline and high molecular weight polymer, the Examiner has a reasonable base to believe that the resulting polyolefin falls into the scope of the claimed polymer. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. **In re Best**, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); **In re Fitzgerald**, 205 USPQ 594 (CCPA 1980).

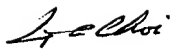
Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is (703)305-0887.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on (703)308-2450.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703)308-2351.



Ling-Siu Choi

April 20, 2003